

Trade with Developing Countries in a Global Value Chain World

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Introduction

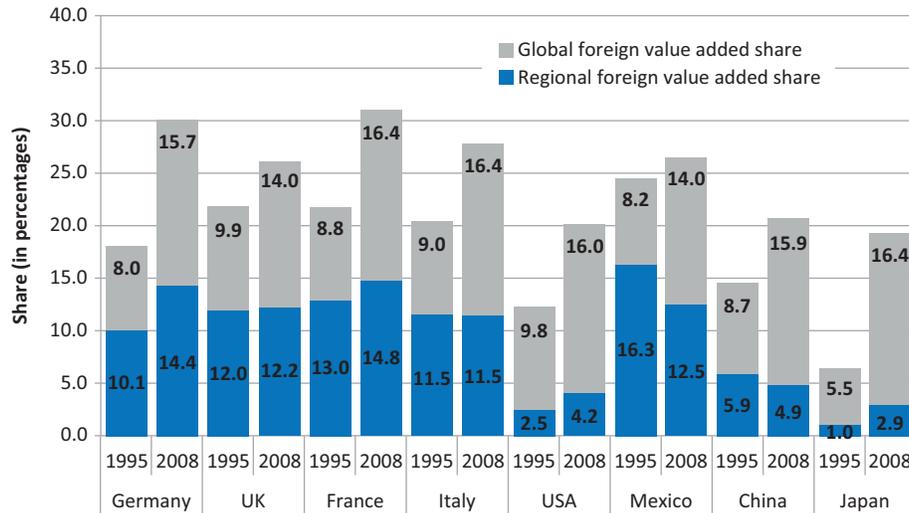
Early in 2017 we heard bad news about international trade. President-elect Trump threatened GM with large tariffs on imports of GM compact cars from Mexico, if GM went forward with plans for increased Mexican production.¹ Following similar threats, Ford Motors stopped plans for expansion of its own Mexican production and focused on increasing “jobs in Michigan.”² While the decisions of these firms involved many factors, clearly the threat of large trade barriers was a major factor, and the firms pulled back on increased production in Mexico.

These threats and firms’ responses to them should raise serious concerns for several reasons. First, much of world trade today involves global value chains (GVCs). Across many industries, production chains are split into tasks carried out by many firms in many countries. Second, this international joint production relies on open markets. Third, GVCs bring significant benefits by promoting more efficient production, expanded gains from trade, and new channels for economic development. These benefits are important and are at risk if firms choose less efficient production strategies due to actual or threatened trade barriers. The stakes involved are high for both industrial and developing countries.

I GVC Trade Is Large and Growing

One way to track the importance of GVC trade is to measure the share of foreign value-added (FVA) in production for final output. Los and coauthors (2015) measure FVA for value chains in 14 product groups and about 40 countries that deliver the final product. As figure 1 shows, FVA shares in these GVCs have increased substantially between 1985 and 2008. In Germany and France, FVA has nearly doubled, reaching

Figure 1. Regional and Global Foreign Value Added Shares in Final Output, Selected Countries, 1995 and 2008.



Source: Los, Timmer and deVries, 2015.

about 30% of the value of final output. What's more, these GVCs are becoming more global. During the 1990s, GVC growth appeared to concentrate in regions such as “factory North America” (the US, Canada, and Mexico) or “factory Asia” (China, Japan, South Korea, and other Asian partners) (Baldwin, 2013). While the evidence in Figure 1 still suggests regional value chains are significant, a large part of the growth in GVC production is now coming from “global FVA”—value-added from countries outside these traditional regional networks. This means new countries participating in existing value chains as well as a broader set of countries participating in new value chains.

II GVC Production Relies on Open Markets

Within GVCs, tasks are split up across firms in different countries, sequentially or in networks. Semi-finished products cross borders multiple times as value is added at each step in the chain. This means that both exports and imports increase in the process of creating the final product. Firms import foreign value-added from upstream firms for further processing (backward integration), export domestic value added to

downstream firms for processing and use as in input by a third country (forward integration), and may also re-import domestic value-added embodied in imported inputs that are then used to produce exports (Baldwin, 2013; Blanchard, 2015).

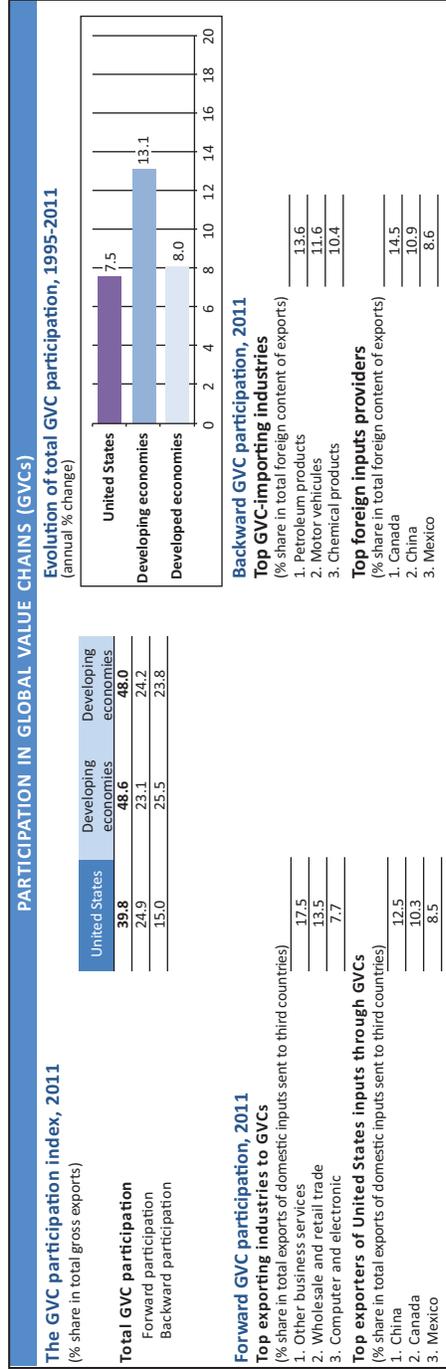
Figures 2 and 3 show some evidence of this highly integrated, joint international production and its relation to trade flows. According to WTO calculations using the trade-in-value-added (TiVA) data, nearly 40% of value-added in US gross exports is related to GVC participation (Figure 2) in 2011. Most of this is forward participation. US firms are involved largely in the upstream tasks in many chains and export their value-added to other firms to be used as inputs in goods to be exported to third countries. US top exporting industries to GVCs are Other Business Services, Wholesale and Retail Trade, and Computer/Electronic Equipment. The top exporters of US inputs through GVCs are firms in China, Canada, and Mexico.

Evidence for China (Figure 3) shows an even higher amount of GVC participation in 2011 (48%). But Chinese participation is largely in backward integration. China's firms are more downstream in GVCs, importing value-added from other countries, adding value, and exporting final goods. China imports about 32% of the value-added embodied in its overall gross exports. China's top GVC importing industries are Computers/Electronic Equipment, Textiles, and Electrical Machinery. Interestingly, the top foreign input providers to China through GVCs are Japan, the US, and S. Korea. Thus, the evidence in Figures 2 and 3 illustrates not only the dominant role that GVC trade has for both the US and China, but also the differing roles firms play in these production chains and the highly integrated nature of the production processes.

III GVCs Bring Significant Benefits

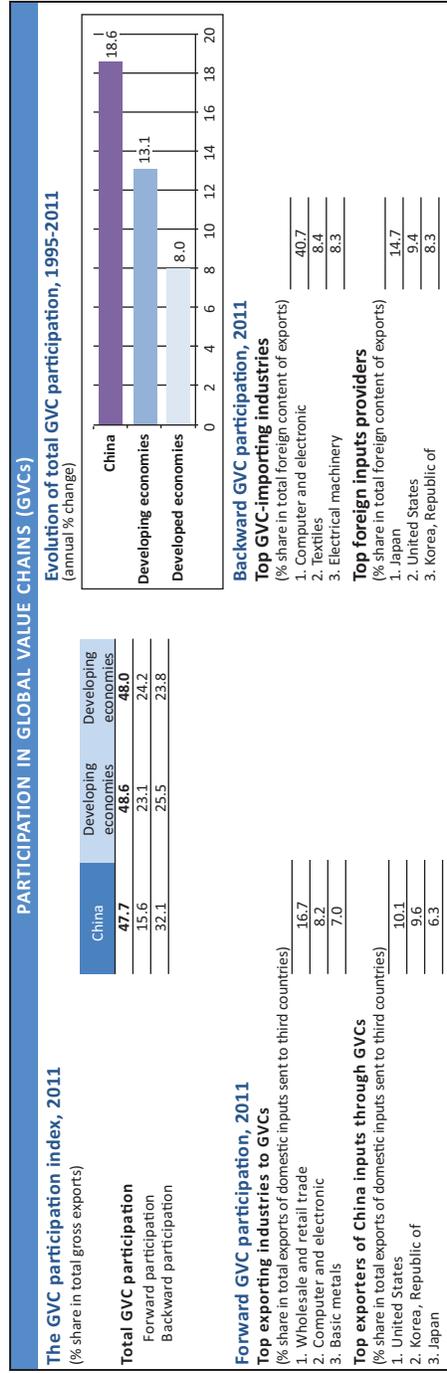
GVCs involve splitting the tasks in the production chain across firms in different countries. While property rights protection, quality control, and ability to meet specifications are important factors in the dispersion of tasks, comparative advantage still plays a significant role. For example, within a high-tech industry like computers, we would expect high-skill intensive tasks to be typically carried out in industrial countries, while less-skill intensive tasks in the chain would occur in developing countries. The ability to produce a product in a GVC is thus likely to increase

Figure 2. Trade in Value-Added: The United States.



Source: WTO, https://www.wto.org/english/res_e/status_e/miwi_e/US_e.pdf, downloaded 1-2-18

Figure 3. Trade in Value-Added: China.



Source: WTO, https://www.wto.org/english/res_e/status_e/miwi_e/CN_e.pdf, downloaded 1-2-18

Figure 4. Foreign Value Added (FVA) Share of China's Gross Exports, 2011.

Industry	Total FVA Share (%)	OECD Share (%)
Computer, Electronic and optical equipment	55	34
Chemicals and chemical products	45	22
Rubber and plastics products	39	22
Textiles, textile products, leather, and footwear	27	15
Food products, beverages, and tobacco	25	12

Source: Author's calculations based on TiVA data, <http://stats.oecd.org/>, downloaded 1-3-18.

trade between industrial and developing countries, since comparative advantage differences between them are large.

The FVA shares of China's gross exports across industries supports the notion that comparative advantage affects the location of tasks (Figure 4). In computers, electronics, and optical equipment, even in 2011, 55% of the value-added of China's exports is imported from foreign countries, with 34% sourced from OECD countries. In contrast, relatively less skill-intensive industries like textiles, apparel, leather, and footwear show lower FVA share overall (27%) and a very small FVA share from the OECD.³

The traditional gains from trade come from a more efficient allocation of resources across the production of goods and services, and consumers' increased purchasing power for goods and services due to better prices at which to exchange them. The availability of GVC production expands the gains from trade for all participating countries by adding a new source of gain—a more efficient allocation of the tasks within the production process itself (Dean, 2013; Los, Timmer, & deVries, 2015; Los, Stehrer, Timmer, & deVries, 2015).

GVCs also open up new channels to stimulate economic development. While complete production of high tech- or high skill-intensive products are outside a developing country's scope of comparative advantage, GVC production opens up the possibility of participating in the less-skill intensive tasks within the chain. Thus, a country like China may export cell phones, though more than half of the value of those phones is created in higher-income countries (Dean, 2013; Dean, Fung, & Wang, 2011).

Developing country participation in GVCs is often carried out by equity joint ventures or foreign subsidiaries. This not only increases investment but may offer more opportunities for technology transfer, learning, and other spillovers. Participation may also increase access to finance and knowledge of foreign markets, helping to surmount some of the obstacles to trade that small and medium scale firms often face. The potential for GVC participation also increases incentives for developing countries to improve property rights and rule of law and for developing country firms to improve quality control, ability to meet product specifications, and other important business practices (Winkler & Taglioni, 2014; WTO, 2016). Opportunities to participate in GVCs may also lead to specialization in cleaner types of goods and tasks and the use of greener technologies (Dean & Lovely, 2010).

IV The Stakes Are High

International trade has been an important driver in the reduction of poverty in the developing world. The recent experiences of India and China seem to attest to this. Both countries have shown remarkable growth and poverty reduction since their extensive economic reforms in the 1990s, and dramatic trade liberalization was a prominent feature of these reforms. Clearly freer trade alone is not sufficient to generate sustainable development, and multiple solutions to address both domestic and trade distortions are crucial. Thus far, however, evidence strongly supports the claim that freer trade has at least helped to promote faster growth and poverty reduction in China, India, Vietnam, and other developing countries (World Bank, 2015; Winters, et al., 2004; Winters & Martuscelli, 2014).

Given the pivotal role of global markets in the prosperity of many developing countries, raising trade barriers against these countries could severely set back their progress. Developing countries already face impediments to involvement in GVCs, such as lack of access to finance, inadequate property rights, and poor quality control (Winkler & Taglioni, 2014; WTO, 2016). If lead firms in GVCs pull tasks out of developing countries, or back away from planned incorporation of developing country firms into production chains, this could severely impede development progress.

From the industrial country's perspective, trade barriers would also be extremely damaging. They generate losses through distorting

production towards industries in which the country has a comparative disadvantage and distorting consumer prices so that purchasing power falls. In a world where GVC trade is significant, such barriers raise costs along the supply chain. Thus, a US tariff on automobiles will mean that a US car jointly produced in Canada and Mexico will be less competitive both at home and globally. In addition, because intermediate goods within the GVC cross borders multiple times, the distortions caused by a trade barriers are magnified (Yi, 2003). Ferrantino (2012) finds that cascading transactions costs through the GVC dramatically raises the final costs of production and the price of the good to the consumer. Finally, as Blanchard (2015) notes, new evidence already shows that firms are influenced by both threats and uncertainty in trade policy. This undermines the efficiency of production and again raises the cost to consumers.

Trade is not a zero-sum game. In a world where products are increasingly produced jointly across firms in many countries, the gains from keeping global markets open are even larger, and more apparent, than in the past. These gains are shared by all trading partners and have contributed to growth and development across many of the most vulnerable in the world. We should work to keep trade open for our own sake and for our neighbor's sake.

Endnotes

1. *Chicago Tribune*, "In tweet, Trump rails against General Motors for importing Mexican-made cars to U.S., but GM says most cars are made in Ohio," Jan. 4, 2017.
2. *The Economist*, "Ford Motors courts Donald Trump by scrapping a planned plant in Mexico," January 5, 2017.
3. Author's calculations based on TiVA data, <http://stats.oecd.org/>, downloaded 1-3-18.

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